

Application No. 10/687,727
Amendment dated October 9, 2007
Reply to Office Action of July 9, 2007

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REMARKS

In view of the above, applicant believes the pending application is in condition for allowance.

Claims 11-15 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,856,429 to Noguchi et al. (hereinafter "Noguchi") in view of U.S. Patent No. 5,619,280 to Yamashita et al. (hereinafter "Yamashita") and U.S. Patent No. 5,187,570 to Hibi et al. (hereinafter "Hibi"). Applicants respectfully traverse this rejection.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must be found in the prior art, and not based on Appellant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991); M.P.E.P. 2143.

Here, the Examiner has failed to establish a *prima facie* case of obviousness because none of the three basic criteria is met by the cited references. Here, the Examiner has failed to establish a *prima facie* case of obviousness because none of the three basic criteria is met by the cited references. Noguchi, Yamashita, or Hibi individually or in combination therewith do not teach or suggest all the claim limitations of claims 11-15. In fact, as admitted by the Examiner, the primary cited reference, Noguchi, does not teach or suggest any of the steps or elements required in independent

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claims 11, 14, and 15. Particularly, the Examiner admits that "Noguchi does not disclose the apparatus comprising a color balance adjustment section ... and a gradation value determining section ..." (Office Action, page 6, lines 5-7); and "Noguchi and Hibi do not disclose a calculating section ... a judging section ..." (Office Action, page 7, lines 13 to page 8, line 6). Hence, it is unclear as to why Noguchi was cited at all, let alone as a primary reference, when, even by the Examiner's own admission, Noguchi does not teach or suggest any of the recited elements of independent claim 14 (and similarly any of the recited steps in independent claim 11 and any of the recited instructions in independent claim 15). To cure these deficiencies with Noguchi, the Examiner turns to Yamashita and Hibi.

Applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to contradict the clear teaching of the prior art reference to render claims unpatentable. The prior must to be judged based on a full and fair consideration of what that art teaches, not by using Applicants' invention as a blueprint for gathering various bits and modifying the pieces in an attempt to reconstruct Applicant's invention. Here, the Examiner has gone as far as to change the principle of the operation of the reference to render the reference inoperable for its intended purpose. It is respectfully submitted that even if the combination of bits and pieces of the prior art were assembled in the manner that the Examiner contends to have been obvious to one skilled in the art, the result still does not include an image processing method and apparatus of claims 11-15. The combination of Noguchi, Yamashita, and Hibi contains no disclosure or teachings of determining a color ratio for each respective color components and adjust each color component based on the respective color ratio. The force of logic compels the conclusion that a prior art reference which is silent as to the existence of a problem, cannot teach its solution.

Even assuming *arguendo* that the Examiner's proposed combination is proper, the combination of Noguchi, Yamashita, and Hibi still fails to teach or suggest all of the

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elements of the present claims. Yamashita is directed to a conversion apparatus for restricting the saturation of an image by lowering the amplitudes of original chroma signal or color difference signals. However, contrary to the Examiner's assertion, Yamashita does not teach or suggest "determining a maximum value and a minimum value among correction values (b, g, r) of respective color components" and "calculating a difference (DR) between said maximum value and said minimum value" to correct pixel values, as required by independent claim 11 (and similarly required by independent claims 14 and 15). Whereas, Yamashita merely describes setting "a predetermined level not less than the maximum amplitude of the luminance signal," and detecting "the maximum value of the three primary color signals," and lowering "the amplitude of the color difference signals, if the maximum value exceeds the predetermined level." (Yamashita, col. 4, lines 27-34). Similarly, Yamashita describes setting "a predetermined level not greater than the minimum amplitude of the luminance signal," and detecting "the minimum value of the three primary color signals," and lowering "the amplitude of the chroma signals, if the minimum value exceeds the predetermined level." (Yamashita, col. 4, lines 51-57)

Hence, contrary to the Examiner's assertion, Yamashita merely describes lowering the amplitude of the color difference signals if the maximum value exceeds the predetermined value which is not less than maximum amplitude of the luminance signal and lowering the amplitude of the chroma signals if the minimum value exceeds the predetermined value which is not greater than the minimum amplitude of the luminance signal. One of ordinary skill in the art will not equate (1) determining the maximum and minimum value among the correction values of respective color components of the present invention with determining the maximum and minimum value of the three primary color signals; nor (2) calculating the difference between the maximum and minimum values of the present invention with lowering the amplitudes of the color difference and chroma signals, as suggested by the Examiner.

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Additionally, contrary to the Examiner's assertion, Yamashita does not teach or suggest obtaining the color ratios for the respective color components by dividing the calculated differences (Δb , Δg , Δr) between the respective correction values of the respective color components and the minimum value with the calculated difference (DR) between the maximum and minimum value, as required by independent claim 11 (and similarly required by independent claims 14 and 15). In fact, column 5, lines 9-12 in Yamashita, cited by the Examiner merely describes using a correction factor k to restrict "the saturation of an image by lowering the amplitudes of original chroma signals or color difference signals and exceed an admissible maximum level or fall below an admissible minimum level." (See also, Yamashita, col. 7, lines 23-24). One of ordinary skill in the art will not equate obtaining the color ratios of the present invention with multiplying the color difference signals, as suggested by the Examiner.

Further, Yamashita does not teach or suggest determining a pixel having a correction value overflowing from a predetermined maximum output gradation value or having a correction value underflowing from a predetermined minimum output gradation value as an inappropriate pixel, and setting the overflow and underflow correction values to the predetermined maximum and minimum output gradation values, respectively, as required by independent claim 11 (and similarly required by independent claims 14 and 15). Whereas, contrary to the Examiner's assertion, Yamashita describes preventing overflow by multiplying the color difference signals with a coefficient factor k equal to $(S-Y)/(Max-Y)$. (Yamashita, col. 7, line 36). "Multiplying means 5A and 5B restrict saturation by multiplying each of the R-Y and B-Y by the correction factor k to attenuate the two color difference signals at an identical rate. This processing is aimed at preventing overflow in primary color signals without changing hue." (Yamashita, col. 7, lines 38-42)

Moreover, contrary to the Examiner's assertion, Hibi does not teach or suggest "controlling color balance adjustment so as to cause the correction values of said

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inappropriate pixel to agree with said respective color ratio thereof," as required by independent claim 11 (and similarly required by independent claims 14 and 15). That is, in the present invention, each color component is adjusted based on its respective color ratio. Whereas, Hibi describes that "the gradation property of the value information of an input original is linearly compressed so as to correspond to that of the color difference from the white paper state to the mesh 100% in the output section. This feature ensures the outputting of a good mono color image." (Hibi, col. 39, lines 6-11)

"To imbue one of ordinary skill in the art with knowledge of the present invention, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim of the insidious effect of hindsight syndrome, wherein that which only the inventor taught is used against the teacher." *W.L. Gore & Assoc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983). Applicants respectfully submit that the Examiner has failed to establish the basic requirements of a *prima facie* case of obviousness for claims 11-15 because the combination of Noguchi, Yamashita, and Hibi does not teach or suggest the elements or steps of the image processing apparatus and method as required in claims 11-15 of the present invention.

Furthermore, claim 12 depends on claim 11 and additionally requires utilizing "sums of said minimum value and respective product values obtained by multiplying a difference between the maximum output gradation value and the minimum value by the color ratios as the respective final pixel values if the correction value of at least one color component overflows from the maximum output gradation value." Claim 13 depends on claim 11 and additionally requires utilizing "the product value obtained by multiplying the maximum value by its color ratio as its final pixel value, if the correction value of the at least one color component underflows from the minimum output gradation value." In fact, col. 12, lines 41-50 in Yamashita, cited by the Examiner, merely describes "Multiplying means 39A and 39B output image signals without any overflow by

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multiplying each of the color difference signals R-Y and B-Y by the correction factor k to restrict saturation by attenuating the two color difference signals at an identical rate." Hence, contrary to the Examiner's assertion, Yamashita does not teach or suggest adjusting the color balance of each color component using its respective color ratio in a manner required in claims 12 and 13. Applicants respectfully submit that not only does Yamashita determine the correction factor k in a totally different manner from the color ratio of the present invention, Yamashita does not even determine the corrector factor k for each color component.

Claims 16-20 have been rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Yamashita in view Hibi and further in view of U.S. Patent 5,949,556 to Tamai (hereinafter "Tamai"). Applicants respectfully traverse this rejection.

Here, the Examiner has failed to establish a prima facie case of obviousness because none of the three basic criteria is met by the cited references. In fact, Yamashita, Hibi, or Tamai individually or in combination therewith do not teach or suggest all the claim limitations of claims 16-20.

Applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to contradict the clear teaching of the prior art reference to render claims unpatentable. The prior must to be judged based on a full and fair consideration of what that art teaches, not by using Applicant's invention as a blueprint for gathering various bits and modifying the pieces in an attempt to reconstruct Applicant's invention. Here, the Examiner has gone as far as to change the principle of the operation of the reference to render the reference inoperable for its intended purpose. Claim 16 requires "a conversion section for converting the image data in the RGB color system into a different color system for image quality adjustment." Whereas, col. 6, lines 59-61 in Yamashita, cited by the Examiner, describes a reverse process: "RGB

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conversion means 1 converts an input luminance signal Y and color difference signals R-Y and B-Y into primary color RGB signals."

As admitted by the Examiner, Yamashita does not teach or suggest an image quality adjustment section, a reverse conversion section, a judging section, and a color balance adjustment section. To cure these deficiencies, the Examiner turns to Tamai and Hibi. Even assuming *arguendo* that the Examiner's proposed combination is proper, the combination of Yamashita, Hibi, and Tamai still fails to teach or suggest all of the elements of the present claims.

Tamai relates to an image processing apparatus for converting a photographic original into an illustration image. Contrary to the Examiner's assertion, Tamai does not teach or suggest "an image quality adjustment section for adjusting image quality of the converted image data," as required in claim 16. In fact, abstract, line 7 in Tamai, cited by the Examiner, merely describes that it outputs "a high-quality image of an illustration."

Additionally, contrary to the Examiner's assertion, Tamai does not teach or suggest "a judging section for determining whether pixel values of each pixel constituting the reverse-converted image data are confined within said predetermined gradation range," as required in claim 16. In fact, col. 11, lines 7-11 in Tamai, cited by the Examiner, merely describes "judging that pixel of interest is a black dot." One of ordinary skill in the art will not equate the judging section of the present invention with judging whether a pixel is a black dot, as suggested by the Examiner.

Moreover, contrary to the Examiner's assertion, Hibi does not teach or suggest "a color balance adjustment section for performing a predetermined calculation on pixel values of the respective color components included in each pixel determined as being out of said predetermined gradation range by the judging section, thereby to cause the pixel values thereof to be confined within said predetermined gradation range, and adjusting

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said pixel values of said each pixel to fixedly maintain a ratio among the pixel values of the respective color components based on the minimum value among said pixel values, as required by independent claim 16. That is, only the present invention teach adjusting the pixel values of each color component of a pixel to fixedly maintain a ratio if the pixel is determined to be outside a predetermined gradation. Applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to render claims unpatentable.

It is respectfully submitted that even if the combination of bits and pieces of the prior art were assembled in the manner that the Examiner contends to have been obvious to one skilled in the art, the result still does not include an image processing apparatus of claims 16-20. Hence, contrary to the Examiner's assertion, the combination of Yamashita, Hibi, and Tamai does not teach or suggest all of the elements of claims 16-20.

Claim 17 depends on claim 16 and additionally requires that the color balance adjustment section "fixedly maintain an average value of the pixel value of each color component contained in the pixel prior to the adjustment. Col. 1, line 16 in Hibi, cited by the Examiner, merely describes that an image processing apparatus has a color balance/color correction circuit. Applicants respectfully request that the Examiner kindly pointed out where in Hibi it describes the color balance adjustment section maintains the average value of the pixel value of each color component contained in the pixel prior to the adjustment, as required in claim 17. Applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to render claim 17 unpatentable.

Claim 18 additionally requires that the color balance adjustment section "cause the maximum pixel value to agree with the maximum value of the predetermined gradation range. Col. 1, line 16 and col. 6, line 35 in Hibi, cited by the Examiner, merely describes that an image processing apparatus has a color balance/color correction circuit. Applicants respectfully request that the Examiner kindly pointed out where in Hibi it

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describes the color balance adjustment section causes the maximum pixel value to agree with the maximum value of the predetermined gradation range, as required in claim 18. Applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to render claim 18 unpatentable.

Claim 19 additionally requires that the color balance adjustment section "cause the minimum pixel value to agree with the minimum value of the predetermined gradation range. Col. 1, line 16 and col. 6, line 35 in Hibi, cited by the Examiner, merely describes that an image processing apparatus has a color balance/color correction circuit. Applicants respectfully request that the Examiner kindly pointed out where in Hibi it describes the color balance adjustment section causes the minimum pixel value to agree with the minimum value of the predetermined gradation range, as required in claim 19. Applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to render claim 19 unpatentable.

Although claim 20 has been rejected over the combination of Yamashita, Hibi, Tamai (as shown on page 11 of the Office Action), it appears that the Examiner is relying on the combination of Yamashita, Hibi, Tamai and Noguchi in rejecting claim 20 (as set forth on page 15 of the Office Action). Claim 20 additionally requires that the color balance adjustment section "maintain the ratio and/or average value of the pixel value of the pixel for adjustment. Col. 1, line 16 and col. 6, line 35 in Hibi, cited by the Examiner, merely describes that an image processing apparatus has a color balance/color correction circuit. Applicants respectfully request that the Examiner kindly pointed out where in Hibi it describes the color balance adjustment section maintains the ratio among the pixel values of the respective color components, as required in claim 20. Further, col. 12, lines 45-46, cited by the Examiner, merely describes that "the average values [r], [g], [b] are calculated as color and density correction values for each channel." That is, at best, Noguchi describes a correction based on average values of pixel values, and does not teach or suggest maintaining the average value of the pixel value of the pixel for adjustment, as

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required in claim 20. Therefore, applicants respectfully submit that the Examiner cannot use hindsight gleaned from the present invention to render claim 20 unpatentable.

Statements appearing above in respect to the disclosures in the cited references represent the present opinions of the applicants' undersigned attorney and, in the event that the Examiner disagrees with any of such opinions, it is respectfully requested that the Examiner specifically indicate those portions of the reference providing the basis for a contrary view.

On the basis of the above amendment and remarks, reconsideration and allowance of claims 11-20 are respectfully requested

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Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-0624, under Order No. NY-KIT 360-US (10312937) from which the undersigned is authorized to draw.

Dated: October 9, 2007

Respectfully submitted,

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